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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,378	11/15/2001	Rajesh S. Pazhyannur	CE08500R	5362

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EXAMINER	
NGO, NGUYEN HOANG	
ART UNIT	**PAPER NUMBER**
2663	

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/003,378	PAZHYANNUR ET AL.	
	Examiner	Art Unit	
	Nguyen Ngo	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
(e) BACKGROUND OF THE INVENTION.
(1) Field of the Invention.
(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(f) BRIEF SUMMARY OF THE INVENTION.
(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(h) DETAILED DESCRIPTION OF THE INVENTION.
(i) CLAIM OR CLAIMS (commencing on a separate sheet).
(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

The applicant has failed to provide headings for each section mentioned above in upper case bold type.

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Examiner believes that reference numbers pertaining to the invention should be taken out from the Abstract. Following corrections should be made throughout the Abstract, pertaining to reference numbers.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-4 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sen et al. (US 6556556), hereinafter referred to as Sen.

Regarding claim 1, Sen discloses a method for limiting data packet transmission within a digital mobile telephone communication network, where each point-to-point protocol data packet is divided into multiple radio link protocol frames (a method for selective retransmission within a communication system wherein higher-layer packets are segmented via a link-layer protocol, abstract). Sen further discloses that the method comprises;

a RLP sender that tries to re-transmit a lost frame for at most six times and if the RLP sender fails to transmit a frame successfully, the RLP will move on to subsequent frames (determining that a link-layer frame needs to be aborted, col5 lines 1-8).

that during division of PPP data packets into RLP frames, the RLP sender keeps track of the starting frame of each PPP data packet (determining a set of link-layer frames (V(B)) having higher-layer packet boundaries, col5 lines 30-40).

of setting a marker bit of a starting frame to "1" while all the other frames subsequent to the starting frame within the same PPP data packet are set to "0" (col5 lines 29-31) and that if the data transmission is not successfully completed, all subsequent frames, after the failed frame, having their marker bit set to "0" in need of retransmission (any remaining frames in the PPP data packet) discarded and transmission resumes with a frame having its marker bit set to "1" (selectively retransmitting link-layer frames by setting V(N) to a next missing link-layer frame after a higher-layer packet boundary (analogous to transmission of frames only after the frame

having its marker bit set to "1" is determined) if V(B) is not an empty set (Examiner interprets not an empty set to be analogous to a frame with a flag not being "0"), col6 lines 3-14).

Sen however fails to disclose the specific limitation of otherwise setting V(N) to V(R) if V(B) is an empty set, wherein V(N) is a next link-layer frame needed for sequential delivery of frames and V(R) is a next new link-layer frame expected or as explained in the specification (page 5 line35) the sequence number of the next missing frame. Sen however disclose the known method of re-transmitting all unsuccessful transmitted frames within a PPP data packet using a maximum of six re-transmissions for each frame, and that if the RLP sender fails to transmit a frame successfully after six transmissions attempts, the sender will continue to transmit all frames subsequent to the lost frame because the RLP sender is oblivious to the higher level packet structure (otherwise setting V(N) to V(R), wherein V(N) is a next link layer frame needed for sequential delivery of frames and V(R) is the next new link-layer frame expected, col5 lines 2-9), and provides the motivation to incorporating this well known technique with the improved method for limiting data packet transmissions. It should thus be obvious to revert back to the known method mentioned above when there is only one PPP packet or no subsequent frame with a marker bit of "1", and thus transmitting all frames subsequent to the lost frame in order to effectively use the transmission resources (Examiner interprets V(B) being an empty set to correlate to having only one PPP packet or no subsequent frame with a marker bit of "1").

Regarding claim 2, Sen discloses that the PPP data packet is split into several RLP frames (col5 line25-27) and that after a maximum of six retransmissions for a frame, it is aborted (determining that an RLP frame needs to be aborted, wherein the RLP frame comprises a segment from a PPP packet).

Regarding claim 3, Sen discloses the specific limitation of claim 3 as discussed with claim 2.

Regarding claim 4, Sen discloses that the RLP sender keeps track of the starting frame of each PPP data packet by having a marker bit of "1" in the RLP frame (determining a set of link-layer frames having PPP packet boundaries, col5 lines 35-36).

Regarding claim 13, Sen discloses that a base station is required to return acknowledgements to the mobile station (apparatus, col4 lines 25-29). Sen further discloses that the apparatus comprises;

that the RLP sender transmits the frame to a receiver (col5 lines 60), where the frame is a RLP frame, which was split from a PPP data packet (link-layer frame comprises a segment of a higher-layer data packet, col5 lines 26-27) and that whenever a frame is not received successfully, the receiver sends a NAK control frame requesting the RLP sender for retransmission (a receiver having a poorly received link-layer frame as an input, col4 lines 64-67).

of setting a marker bit of a starting frame to "1" while all the other frames subsequent to the starting frame within the same PPP data packet are set to "0" (col5 lines 29-31) and that if the data transmission is not successfully completed (determining that the poorly received link-layer frame should be aborted), all subsequent frames, after the failed frame (aborted frame), having their marker bit set to "0" in need of retransmission (any remaining frames in the PPP data packet) discarded and transmission resumes with a frame having its marker bit set to "1" (setting V(N) to a next missing link-layer frame after a next higher-layer packet boundary (analogous to transmission of frames only after the frame having its marker bit set to "1" is determined) if V(B) is not an empty set (Examiner interprets not an empty set to be analogous to a frame with a flag not being "0"), col6 lines 3-14).

Sen however fails to disclose the specific limitation of otherwise setting V(N) to V(R) if V(B) is an empty set, wherein V(N) is a next link-layer frame needed for sequential delivery of frames and V(R) is a next new link-layer frame expected or as explained in the specification (page 5 line35) the sequence number of the next missing frame. Sen however disclose the known method of re-transmitting all unsuccessful transmitted frames within a PPP data packet using a maximum of six re-transmissions for each frame, and that if the RLP sender fails to transmit a frame successfully after six transmissions attempts, the sender will continue to transmit all frames subsequent to the lost frame because the RLP sender is oblivious to the higher level packet structure (otherwise setting V(N) to V(R), wherein V(N) is a next link layer frame needed for

sequential delivery of frames and V(R) is the next new link-layer frame expected, col5 lines 2-9), and provides the motivation to incorporating this well known technique with the improved method for limiting data packet transmissions. It should thus be obvious to revert back to the known method mentioned above when there is only one PPP packet or no subsequent frame with a marker bit of "1", and thus transmitting all frames subsequent to the lost frame in order to effectively use the transmission resources (Examiner interprets V(B) being an empty set to correlate to having only one PPP packet or no subsequent frame with a marker bit of "1").

Regarding claim 14, Sen discloses that the RLP sender transmits the frame to a receiver (col5 lines 60), where the frame is a RLP frame, which was split from a PPP data packet (higher-layer data packet comprises a PPP packet, col5 lines 26-27).

Regarding claim 15, Sen discloses that the RLP sender transmits the frame to a receiver (col5 lines 60), where the frame is a RLP frame, which was split from a PPP data packet (received link-layer packet comprises a received RLP packet or poorly-received RLP packet as mentioned in claim 13, col5 lines 26-27).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 5-7 and 8-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Sen et al. (US 6556556) hereinafter referred to as Sen.

Regarding claim 5, Sen discloses a system for limiting data packet transmission within a digital mobile telephone communication network, where each point-to-point protocol data packet is divided into multiple radio link protocol frames (a communication system where a higher-layer packet is segmented and transmitted over a link layer utilizing a link-layer protocol, abstract). Sen further discloses that the method comprises;

that the RLP sender transmits the frame to a receiver (col5 lines 60), where the frame is a RLP frame, which was split from a PPP data packet (receiving a link-layer frame, wherein the link-layer frame comprises data from a first higher-layer packet, col5 lines 26-27).

that whenever a frame is not received successfully, the receiver sends a NAK control frame requesting the RLP sender for retransmission (otherwise sending the NAK, col4 lines 64-67) and if the data retransmission is not successfully completed, all subsequent frames having their marker bit set to "0" (remaining frames within the PPP data packet) are discarded and thus no NAK is needed for the subsequent frames (failing to send a NAK for the link-layer frame if a prior-received link-layer frame was

aborted and the aborted frame comprises data from the first higher-layer packet (PPP packet), col6 lines 3-14).

Regarding claim 6, Sen discloses that the RLP sender transmits the frame to a receiver (col5 lines 60), where the frame is a RLP frame, which was split from a PPP data packet (receiving a RLP frame comprising data from a first PPP packet, col5 lines 26-27).

Regarding claim 7, Sen discloses all the limitations as discussed with claim 5.

Regarding claim 8, Sen discloses that a base station is required to return acknowledgements to the mobile station (apparatus, col4 lines 25-29). Sen further discloses that the apparatus comprises;

that the RLP sender transmits the frame to a receiver (receiving circuitry, col5 lines 60), where the frame is a RLP frame, which was split from a PPP data packet (receiving circuitry having a link-layer frame as in input, the link-layer frame comprising data from a first higher-layer packet, col5 lines 26-27).

that whenever a frame is not received successfully, the receiver sends a NAK control frame requesting the RLP sender for retransmission (otherwise sending the NAK, col4 lines 64-67) and if the data retransmission is not successfully completed (aborted), all subsequent frames having their marker bit set to "0" (remaining frames within the PPP data packet) are discarded and thus no NAK is needed for the

subsequent frames (transmitting circuitry failing to output a NAK for the link-layer frame if a prior-received link-layer frame was aborted, otherwise sending the NAK and prior-received link-layer comprises data from the first higher-layer packet, col6 lines 3-14).

Regarding claim 9, Sen discloses that the RLP sender transmits the frame to a receiver (col5 lines 60), where the frame is a RLP frame, which was split from a PPP data packet (link-layer frame is a RLP frame, col5 lines 26-27).

Regarding claim 10, Sen discloses that the RLP sender transmits the frame to a receiver (col5 lines 60), where the frame is a RLP frame, which was split from a PPP data packet (first higher-layer packet is a first PPP packet, col5 lines 26-27).

Regarding claim 11, Sen discloses that the RLP sender transmits the frame to a receiver (col5 lines 60), where the frame is a RLP frame, which was split from a PPP data packet (PPP packet is fragmented into multiple RLP frames, col5 lines 26-27).

Regarding claim 12, Sen discloses all the limitation of claim 12 as discussed in claim 8.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Jouppi et al. (U.S 6795435), Method For Transmitting Data Transmission Flows.

b) Chang et al. (U.S 6895010), Apparatus and Method For Transmitting And Receiving Data According To Radio Link Protocol In a Mobile Communication Systems.

c) Chang et al. (U.S 6665313), Apparatus and Method For Exchanging Variable-Length Data According TO Radio Link Protocol In a Mobile Communication System.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen Ngo whose telephone number is (571) 272-8398. The examiner can normally be reached on Monday-Friday 7am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

N.N

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5/22/05